House File 2629 – Computer Science Instruction and Requirements

Introduction

On June 29, 2020, Governor Reynolds signed House File (HF) 2629 into law. HF 2629 amended existing law, creating several new requirements for kindergarten to 12th grade (K-12) computer science instruction. With that, the purpose of this guidance is to summarize what is required, optional, and permitted for school districts and accredited nonpublic schools related to computer science instruction.

Definitions

COMPUTER SCIENCE

Computer science is the "study of computers and algorithmic processes, including their principles, their hardware and software designs, their applications, and their impact on society" (Tucker et al., 2003, p. 6). It means learning how to create new technologies rather than simply using them. Computer science is understanding how and why technologies work, exploring whether and how technology could solve real-life problems, investigating procedures, creating solutions, and learning about computing systems, programming, data, networks, and the effects on society and the individual.

HIGH-QUALITY

High-quality means that computer science instruction is aligned to Iowa's computer science standards. At the high school level, the Iowa Department of Education (Department) highly recommends that a "high-quality" computer science course be one that fits into one of Iowa's high-quality computer science School Courses for the Exchange of Data (SCED) codes. These courses were selected for their alignment to Iowa's computer science standards.

Requirements

HF 2629 established several new requirements for districts and accredited nonpublic schools regarding computer science instruction. These requirements, which are expanded on in the following sections, include:

- All public school districts and accredited nonpublic schools must develop and implement a high-quality (i.e., standards-aligned) K-12 computer science plan by July 1, 2022 (281—IAC 12.11(4));
- Elementary schools (grades 1-6) must provide high-quality computer science instruction in at least one grade level beginning July 1, 2023 (Iowa Code § 256.11(3));
- Middle schools (grades 7-8) must provide high-quality computer science instruction in seventh or eighth grade beginning July 1, 2023 (Iowa Code § 256.11(4)); and
- High schools (grades 9-12) must offer at least one high-quality one-semester course beginning July 1, 2022 (Iowa Code § 256.11(5)"*l*").

Required K-12 Computer Science Plan (281—IAC 12.11(4))

All districts and accredited nonpublic schools must develop and implement a K-12 computer science plan by July 1, 2022. This includes accredited nonpublic K-6 and K-8 schools not affiliated with a high school, but it is a local decision about whether feeder schools work together. The K-12 computer science plan must:

- Incorporate the standards for high-quality computer science instruction by aligning to the Iowa Computer Science Standards (281—IAC 12.11(4)) and
- Be confirmed with a Comprehensive School Improvement Plan (CSIP) assurance in the Consolidated Accountability and Support Application (CASA) no later than July 1, 2022.

OPTIONAL TEMPLATE AND POSTING THE PLAN

To assist districts and nonpublic schools, the Department created an optional K-12 computer science plan template. The template includes elements of high-quality computer science instruction and best practices.

In addition, the Department encourages districts and accredited nonpublic schools to post their K-12 computer science plan to their website so that students, parents, employers, and other community members are aware of it.

Required Instruction for Grades 1-12

HF 2629 requires the following computer science instruction:

- **Grades one through six:** Computer science instruction incorporating the standards must be offered in at least one grade level commencing with the school year beginning July 1, 2023 (Iowa Code § 256.11(3));
- **Grades seven and eight:** Computer science instruction incorporating the standards must be offered in at least one of these two grade levels commencing with the school year beginning July 1, 2023 (Iowa Code § 256.11(4)); and
- **Grades nine through 12:** One-half unit of computer science incorporating the standards commencing with the school year beginning July 1, 2022 must be offered and taught (Iowa Code § 256.11(5)*"l"*). The Department highly recommends that instruction is offered in courses that fit into Iowa's SCED codes.

Frequently Asked Questions

1. May a concurrent enrollment course be used to meet the one-half unit computer science requirement for offer-and-teach?

No. A concurrent enrollment course may not be used to meet the one-half unit of computer science required to be offered and taught by July 1, 2022, but it can be used for other computer science courses beyond the requirement (Iowa Code § 257.11(3)*"c"*). For additional information regarding the requirements of offer-and teach, see the offer-and teach guidance.

2. Can the high school computer science course be housed at a career academy instead of an individual high school?

Yes. A career academy may house a course as long as the course:

- Meets all general accreditation requirements (see the Chapter 12 Rule Interpretation Matrix),
- Is available to all students,
- Provides transportation if off-site, and
- The teacher is appropriately licensed in Iowa.

Iowa Department of Education guidance should be viewed as advisory unless it's specifically authorized by state statute, according to Iowa Code section 256.9A. This does not apply to administrative rules, declaratory orders, or materials required by federal law or courts.

Page | 2

3. Does a .33 trimester computer science course cover the one-half unit requirement?

No. A one-half unit is a course which meets one of the following criteria:

- It is taught for at least 100 minutes per week for 18 weeks;
- It is taught for the equivalent of 60 hours of instruction;
- It requires the demonstration of proficiency of formal competencies associated with the course according to the State Guidelines for Competency-Based Education; or
- It is an equated requirement as a part of an innovative program filed as prescribed in rule 281—12.9(256) (281—IAC 12.5(14)).

4. Can a high school incorporate the standards into multiple classes instead of offering a computer science course?

No. The legislation requires one-half unit of computer science to be offered and taught (Iowa Code § 256.11(5)*"l"*).

5. Can the required computer science course be a career and technical education (CTE) class?

No. Offer-and-teach requirements must be fulfilled with separate courses. State law calls for CTE courses and the soon-to-be required one-half unit high school computer science course to be taught separately (281—IAC 12.5(5)*"i"*).

6. Is there a minimum number of standards that must be incorporated into computer science instruction? Which standards must be incorporated into the instruction?

No. The law requires that state computer science standards are incorporated into instruction but does not specify a number. However, the Department recommends that courses incorporate as many standards as is appropriate given the content and age of the students.

7. Is there a minimum amount of time that elementary students would need to spend learning computer science?

No. To provide all K-8 students a strong foundation in computer science, best practice indicates instruction should be taught at least weekly, but ideally more frequently, throughout the course of a school year.

8. Do all high school students have to take a computer science class?

No. This is an offer-and-teach requirement for districts and accredited nonpublic schools, not a graduation requirement.

9. Are there specific standards that the high school computer science course must meet?

No. However, the one-half unit required computer science course must be aligned to Iowa's computer science standards. It is highly recommended that the course fit into one of Iowa's high-quality computer science course SCED codes, which were selected for their alignment to Iowa's computer science standards. If selecting a different SCED code, the burden is on the district/school to show alignment.

10. Is there funding to train high school instructors to teach computer science?

Yes. The Computer Science Professional Development Incentive Fund offers funding for professional development. Another source of one-time funding is expected to be available in spring 2021.

Iowa Department of Education guidance should be viewed as advisory unless it's specifically authorized by state statute, according to Iowa Code section 256.9A. This does not apply to administrative rules, declaratory orders, or materials required by federal law or courts.

Page | 3

11. Does computer science instruction in grades 1-6 have to be through a stand-alone course?

No. The course can be stand-alone, integrated, or a combination.

12. Does computer science instruction in grades 7-8 have to be through a stand-alone course?

No. The course can be stand-alone, integrated, or a combination.

13. Does a teacher need to have a computer science endorsement to lead computer science instruction in grades 1-12?

No. A computer science endorsement is not required, at any grade level, to teach computer science. Teachers need only to have an endorsement at the grade level of the students being taught.

Additional Guidance and Questions

For additional guidance and questions, please contact Wren Hoffman at wren.hoffman@iowa.gov and visit the Department's Computer Science webpage.